

Application No. 10/587,559
Paper Dated: September 23, 2008
In Reply to USPTO Correspondence of June 24, 2008
Attorney Docket No. 5038-061176

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Original) A method of manufacturing a broadband reflective polarizing plate using a laminated coating technique, comprising the steps of:

(a) coating a substrate film on which a first orientation layer is coated with a cholesteric liquid crystal solution;

(b) irradiating a cholesteric liquid crystal coating layer formed in (a) with UV to form a liquid crystal film;

(c) coating said liquid crystal layer formed in (b) with a second orientation layer;

(d) coating said second orientation layer with said cholesteric liquid crystal solution having different selective light-reflecting central wavelengths on to form a cholesteric liquid crystal coating layer; and

(e) irradiating said cholesteric liquid crystal coating layer with UV to form a cholesteric liquid crystal film,

wherein two or more cholesteric liquid crystal layers having different selective light-reflecting central wavelengths, which are manufactured by repeatedly performing the above steps (c) to (e) once or more times, are sequentially laminated in order from shorter wavelength to longer wavelength in the laminated coating method, thus forming a broadband reflective polarizing plate covering the range of visible light as a selective reflection wavelength region.

2. (Original) The method of claim 1, wherein said cholesteric liquid crystal film is formed by mixing a curable nematic liquid crystal material and a curable chiral liquid crystal material and then irradiating the mixture with UV.

3. (Original) The method of claim 1, wherein said cholesteric liquid crystal film is formed in such a manner that the selective light-reflecting central wavelengths of said

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cholesteric liquid crystal layers are adjusted to be different by controlling the ratio of mixing of a nematic liquid crystal material and a chiral liquid crystal material and then irradiating the mixture with UV.

4. (Original) The method as claimed in claim 1, wherein said first and second orientation layers are films that can horizontally orientate a nematic liquid crystal.

5. (Original) A broadband reflective polarizing plate covering the range of visible light as a selective light-reflecting central wavelength, which is fabricated in the method according to any one of claims 1 to 4, wherein the number of said first and second orientation layers and cholesteric liquid crystal layers is two or more, the cholesteric liquid crystal layers have different selective light-reflecting central wavelengths, and the cholesteric liquid crystal coating layers are laminated sequentially in order from shorter wavelength to longer wavelength in the laminated coating method.

6. (Original) A method of manufacturing a broadband reflective polarizing plate, comprising the steps of:

(a) coating a substrate film on which a first orientation layer is coated with a cholesteric liquid crystal solution;

(b) irradiating a cholesteric liquid crystal layer formed in (a) with light to form a liquid crystal film;

(c) coating said liquid crystal layer formed in (b) with a second orientation layer;

(d) coating said second orientation layer with said cholesteric liquid crystal solution having different selective light-reflecting central wavelengths on the orientation layer to form a cholesteric liquid crystal film; and

(e) irradiating said cholesteric liquid crystal coating layer with light to form a cholesteric liquid crystal film,

wherein two or more cholesteric liquid crystal layers having different selective light-reflecting central wavelengths, which are manufactured by repeatedly performing the above

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steps (c) to (e) once or more times, are sequentially laminated in order from shorter wavelength to longer wavelength in the laminated coating method, and a retardation film is laminated on the broadband reflective polarizing plate having a visible light region as a selective reflection wavelength region.

7. (Original) The method of claim 6, wherein said cholesteric liquid crystal film is formed by mixing a curable nematic liquid crystal material and a curable chiral liquid crystal material and then irradiating the mixture with UV.

8. (Original) The method of claimed claim 6, wherein said first and second orientation layers are films that can horizontally orientate a nematic liquid crystal.

9. (Original) The method of claim 6, wherein said phase-difference film is attached to the side of said cholesteric liquid crystal film having the shortest wavelength of said broadband reflective polarizing plate.

10. (Original) The broadband reflective polarizing plate manufactured by laminating reflective polarizing plate comprised of two or more laminated structures comprised of said first and second orientation layers and cholesteric liquid crystal layers manufactured according to any of claims 6 through 9, and a retardation film.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)